

1. An isolated polypeptide selected from the group consisting of:
 - a) a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:1-9,
 - b) a naturally occurring polypeptide comprising an amino acid sequence at least 90% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:1-9,
 - c) a biologically active fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-9, and
 - d) an immunogenic fragment of a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:1-9.
2. An isolated polypeptide of claim 1 selected from the group consisting of SEQ ID NO:1-9.
3. An isolated polynucleotide encoding a polypeptide of claim 1.
4. An isolated polynucleotide encoding a polypeptide of claim 2.
5. An isolated polynucleotide of claim 4 selected from the group consisting of SEQ ID NO:10-18.
6. A recombinant polynucleotide comprising a promoter sequence operably linked to a polynucleotide of claim 3.
7. A cell transformed with a recombinant polynucleotide of claim 6.
8. A transgenic organism comprising a recombinant polynucleotide of claim 6.
9. A method for producing a polypeptide of claim 1, the method comprising:

- a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 1, and
- b) recovering the polypeptide so expressed.

11. An isolated polynucleotide selected from the group consisting of:

- a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:10-18,
- b) a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:10-18,
- c) a polynucleotide complementary to a polynucleotide of a),
- d) a polynucleotide complementary to a polynucleotide of b), and
- e) an RNA equivalent of a)-d).

12. An isolated polynucleotide comprising at least 60 contiguous nucleotides of a polynucleotide of claim 11.

13. (Once Amended) A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide selected from the group consisting of:

- a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:10-18,
- b) a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:10-18,
- c) a polynucleotide complementary to a polynucleotide of a),
- d) a polynucleotide complementary to a polynucleotide of b), and
- e) an RNA equivalent of a)-d),

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the method comprising:

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- a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions whereby a hybridization complex is formed between said probe and said target polynucleotide or fragments thereof, and
- b) detecting the presence or absence of said hybridization complex, and, optionally, if present, the amount thereof.

14. A method of claim 13, wherein the probe comprises at least 60 contiguous nucleotides.

15. (Once Amended) A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide selected from the group consisting of:

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- a) a polynucleotide comprising a polynucleotide sequence selected from the group consisting of SEQ ID NO:10-18,
- b) a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to a polynucleotide sequence selected from the group consisting of SEQ ID NO:10-18,
- c) a polynucleotide complementary to a polynucleotide of a),
- d) a polynucleotide complementary to a polynucleotide of b), and
- e) an RNA equivalent of a)-d),

the method comprising:

- a) amplifying said target polynucleotide or fragment thereof using polymerase chain reaction amplification, and
- b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.

54. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:10.

55. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:11.

56. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:12.
57. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:13.
58. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:14.
59. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:15.
60. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:16.
61. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:17.
62. A polynucleotide of claim 11, comprising the polynucleotide sequence of SEQ ID NO:18.

63. (New) An isolated antibody which specifically binds to a polypeptide selected from the group consisting of:

- a) a polypeptide comprising an amino acid sequence of SEQ ID NO:1-9,
- b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence of SEQ ID NO:1-9, said naturally occurring amino acid sequence having protein kinase activity, and
- c) an immunogenic fragment of a polypeptide having an amino acid sequence of SEQ ID NO:1-9.

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64. (New) The antibody of claim 63 which specifically binds to a polypeptide comprising an amino acid sequence of SEQ ID NO:1-9.

65. (New) The antibody of claim 63 which specifically binds to a polypeptide comprising a naturally-occurring amino acid sequence at least 90% identical to an amino acid sequence of SEQ ID NO:1-9, said naturally occurring amino acid sequence having protein kinase activity.

66. (New) A diagnostic test for a condition or disease associated with the expression of PKH in a biological sample, the method comprising:

- a) combining the biological sample with an antibody of claim 63, under conditions suitable for the antibody to bind the polypeptide and form an antibody:polypeptide complex, and
- b) detecting the complex, wherein the presence of the complex correlates with the presence of the polypeptide in the biological sample.

67. (New) The antibody of claim 63, wherein the antibody is:

- a) a chimeric antibody,
- b) a single chain antibody,
- c) a Fab fragment,
- d) a F(ab')₂ fragment, or
- e) a humanized antibody.

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68. (New) A composition comprising an antibody of claim 63 and an acceptable excipient.

69. (New) A method of diagnosing a condition or disease associated with the expression of PKH in a subject, comprising administering to said subject an effective amount of the composition of claim 68.

70. (New) A composition of claim 68, wherein the antibody is labeled.

71. (New) A method of diagnosing a condition or disease associated with the expression of PKH in a subject, comprising administering to said subject an effective amount of the composition of claim 70.

72. (New) A method of preparing a polyclonal antibody with the specificity of the antibody of claim 63, the method comprising:

- a) immunizing an animal with a polypeptide having an amino acid sequence of SEQ ID NO:1-9 or an immunogenic fragment thereof, under conditions to elicit an antibody response,
- b) isolating antibodies from said animal, and
- c) screening the isolated antibodies with the polypeptide, thereby identifying a polyclonal antibody which binds specifically to a polypeptide having an amino acid sequence of SEQ ID NO:1-9.

73. (New) A polyclonal antibody produced by a method of claim 72.

74. (New) A composition comprising the polyclonal antibody of claim 73 and a suitable carrier.

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75. (New) A method of making a monoclonal antibody with the specificity of the antibody of claim 63, the method comprising:

- a) immunizing an animal with a polypeptide having the amino acid sequence of SEQ ID NO:1-9 or an immunogenic fragment thereof, under conditions to elicit an antibody response,
- b) isolating antibody producing cells from the animal,
- c) screening the isolated antibodies with the polypeptide, thereby identifying a monoclonal antibody which binds specifically to a polypeptide having an amino acid sequence of SEQ ID NO:1-9.

76. (New) A monoclonal antibody produced by a method of claim 75.

77. (New) A composition comprising the monoclonal antibody of claim 76 and a suitable carrier.

78. (New) The antibody of claim 63, wherein the antibody is produced by screening a Fab expression library.

79. (New) The antibody of claim 63, wherein the antibody is produced by screening a recombinant immunoglobulin library.

80. (New) A method of detecting a polypeptide having an amino acid sequence of SEQ ID NO:1-9 in a sample, the method comprising:

- a) incubating the antibody of claim 63 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and
- b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide having an amino acid sequence of SEQ ID NO:1-9 in the sample.

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81. (New) A method of purifying a polypeptide having an amino acid sequence of SEQ ID NO:1-9 from a sample, the method comprising:

- a) incubating the antibody of claim 63 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and
- b) separating the antibody from the sample and obtaining the purified polypeptide having an amino acid sequence of SEQ ID NO:1-9.